
Addendum A: Minimum Standards for Tree Planting

The following are minimum standards for tree planting projects as recommended by the Indiana DNR, Division of Forestry grant projects. Any tree planting project that follows these standards should see the trees grow to a mature age. If local ordinances or guidelines require more stringent standards, they should be honored.

Planning

1. A detailed tree planting and maintenance plan must be prepared by a qualified professional and coordinated with local agencies to avoid conflicts.
2. Utilities must be indicated on the plan, and where underground utilities may be present the local utility must be contacted prior to planting.
3. A minimum of one-year warranty is required on all stock contracts.

Species Selection

1. Species will be selected to fit the planting sites, taking into consideration soils and rooting space, overhead space, adjacent utilities and buildings, drainage, pollution problems, and other site conditions.
2. All species will be appropriate for hardiness zone 5 in northern Indiana and hardiness zone 6 in southern Indiana (*see USDA Plant Hardiness Zone Map*).
3. All trees used will be true to name. Size and grading standards will conform to the American Standard for Nursery Stock as established by the American Nurserymen's Association. At a minimum, trees must be at least 1 ½ to 3 inches DBH and a minimum of 8-feet tall for deciduous species and at least 4-feet tall for coniferous species (as defined in the American Standards Institute ANSI) publication Z60.1 – 2004 *American Standards for Nursery Stock*). Larger stock, at least 2 to 2½ -inches in DBH is preferred in high-traffic areas, such as trees planted in downtown locations. **No tree larger than 3 inches DBH will be eligible for reimbursement or used as match.** A copy of the manual is available on the IDNR CUF website here: http://www.in.gov/dnr/forestry/files/fo-ANSI_Z60_1_04.pdf.
 - Only high-quality nursery stock trees will be eligible for reimbursement (park-grade stock is not eligible). High-quality, for the purposes of this grant, refers to trees that are grown and obtained from a licensed nursery and that are: (1) typical of their species of variety and (2) of suitable hardiness for Indiana. They must have self-supporting, straight trunks, and strong central leaders. They must be free from injury, to include: scrapes, wounds, and **improper pruning cuts**. They must also be free from disease, insect, or other infestations. Containerized trees must show no signs of girdling. When in leaf, foliage must be full and vigorous. Whips are also excluded.
4. In caring for trees prior to planting, all precautions customary in good trade practice will be taken.

Site Selection

1. Trees will be located so that they do not block infrastructure such as signs and lights and they do not reduce visibility.
2. Trees will not be planted within 30 feet of an intersection or 15 feet of driveways and alleys.
3. Trees will not be planted within 10 feet of utility poles or fire hydrants.
4. Large street trees (mature height greater than 45 feet) should be planted a minimum of 45 feet apart and with a minimum of 6 feet of rooting width.
5. Medium street trees (mature height between 45 feet and 30 feet) should be planted a minimum of 30 feet apart, and with a minimum of 5 feet of rooting width.
6. Small street trees (mature height less than 30 feet) should be planted a minimum of 15 feet apart, and with a minimum of 4 feet of rooting width.
7. Only trees with mature heights less than 25 feet will be planted under or within 20 feet of overhead utility lines.

Planting Standards (see diagram)

A **qualified professional AND the project coordinator must be on site** and supervise all tree planting. This means that they **must be ON SITE when the ALL trees are installed**. The following criteria will be used as a minimum in carrying out and inspecting the projects.

1. Holes dug for planting of trees will be at least twice the diameter of the root system or root ball. Sides of the hole should be sloped. All holes should be slightly less deep than the rootball.
 - Dig the planting hole shallower in areas with wet soil conditions and backfill up to the edge of the rootball. This will allow for “settling” of the tree.
2. Trees will be planted with the root flare at grade. This may mean removing soil on top of the rootball to get to the flare. In compacted or heavy clay soils, they can be planted slightly higher (no more than 1/3 of the root ball above ground level). Seeing the root flare at grade level is crucial. **In no case should the first root emerging from the trunk be below the soil level.**
3. Cut any circling roots prior to planting the tree.
4. Strings and twine will be removed from the trunk(s) of trees. **The burlap and wire basket will be removed.**
5. Backfill with existing soil if suitable. Excess soil from the hole will be removed; **leftover soil should never be placed over the root zone.** This changes the grade of the landscape and plants the tree too deep.
6. Trunk wrap is not necessary. However, a free standing wrap/screen tube may be used when sensitive species are exposed to direct sun. Remove wrap after first growing season. The wrap should allow some light to pass through and it should not be in direct contact with the trunk.
7. A layer of mulch, 2 to 4 inches thick, and 4-6” away from the trunk, will be applied around the tree in a circle at twice the diameter of the root ball. **Under no circumstances should trees be volcano mulched.** Do not pile mulch directly against the tree trunk.
8. Dead, damaged, or poorly located branches will be removed using proper pruning techniques.

9. All bare root trees (and balled and burlap trees if in exposed, windy areas) will be staked to keep them upright for one growing season. All staking materials **MUST** be removed from the tree the year after planting.
 - When staking, use flat, grommated straps rather than ropes, wires, or hose segments against the trunk. The straps spread the pressure over a wider area, reducing the potential for bark damage. Straps should lie flat against the trunk and should not be bunched up or twisted. Two or three straps are routinely used in tree staking.
10. Thoroughly water the tree and the entire mulch area. A long slow soak is best.

Tree Maintenance

Trees should be maintained for a minimum of three years to insure survival. Tree maintenance is particularly important through the growing season, generally April through October. Watering is especially important and must be planned.

1. Trees must have protection and maintenance in place that meets or exceeds *ANSI A300 Standards for Tree Care Operations* standards.
2. Trees will be inspected every 6 months to evaluate general health and disease and insect problems.
3. Treat disease and insect problems as needed to maintain tree health.
4. Water during the growing season. When watering, plan five gallons of water plus five gallons for every additional diameter inch of the tree trunk per week. For example, if a tree has a trunk diameter of 2 inches, provide 10 gallons of water slowly over the root zone.
5. Trees will be pruned as needed to remove dead, damaged, or poorly located limbs using accepted practices of industry (***American National Standards Institute (ANSI) A300 (Part) – 2008 Pruning for Tree Care Operations – Tree, Shrub, and other Woody Plant Maintenance Standard Practices (Pruning)***).
6. Trees will be fertilized as needed. **Do not fertilize during the first two or three growing seasons,** and then, only if the tree needs it. This can be determined with a test done by a soils lab.

Important Planting Notes

- The best soil amendment for successful planting is water. Research has shown no measureable benefit to using other soil amendments (Chalker-Scott, Linda, 2009).
- Place no soil over the rootball at planting. Deep planting kills trees.

Grant Funds and Match

Grant funds may only be used to purchase landscape-grade trees. Shrubs or other ornamental plants will not qualify for funding and may not be used as match. All labor and other supplies, as well as the planting of the trees themselves, qualify as match for this grant.



Tree Planting Guidelines for Balled & Burlap Stock

Limit pruning at the time of planting. Prune only broken or dead branches.

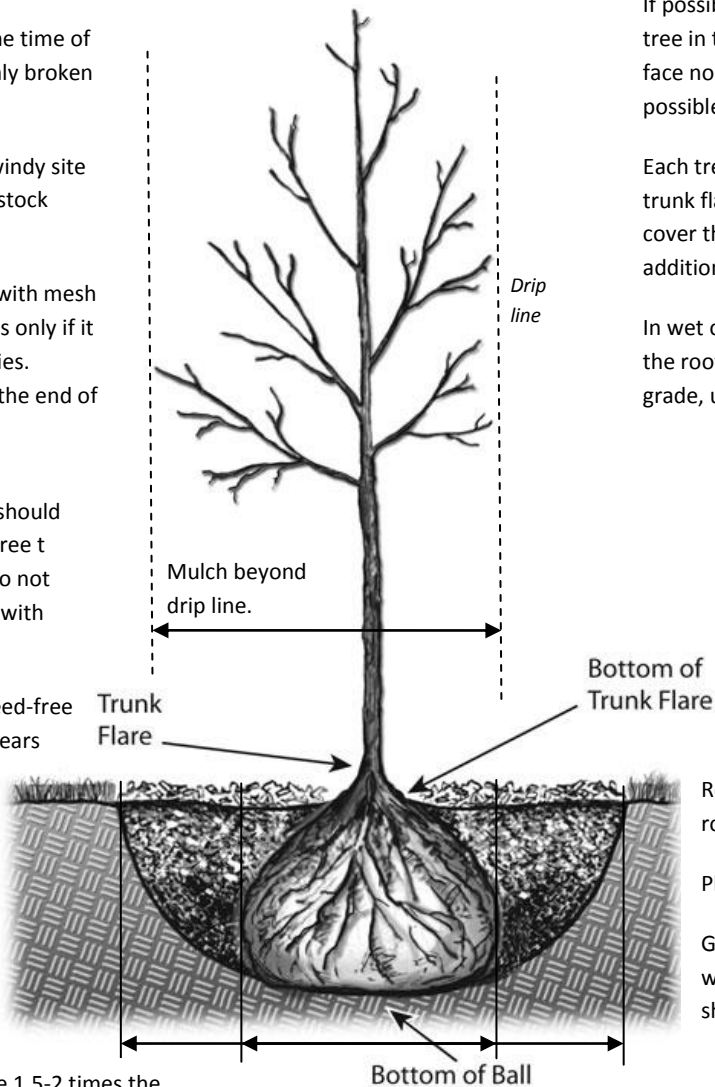
Stake only if in a windy site or needed due to stock type.

Wrap tree trunks with mesh or screen materials only if it is a thin bark species. Remove wraps at the end of winter.

2 to 4 inches of mulch should be spread around the tree t beyond the drip line. Do not place mulch in contact with the tree trunk.

Maintain the mulch weed-free from a minimum of 3 years after planting.

The hole should be 1.5-2 times the width of the root ball. EX: a 32" root ball should have a minimum wide 48" hole



If possible, mark the north side of the tree in the nursery, and rotate tree to face north at the site whenever possible.

Each tree must be planted so that the trunk flare is at grade level. Do not cover the top of the root ball with additional soil.

In wet or slowly draining areas, position the root flare 1 to 2 inches above grade, use excess soil to

To locate the trunk flare, or root, flare, find the first main lateral root and plant the tree with that first root at or 1 to 2 inches below grade.

Remove all twine, rope, wire, and burlap from root ball.

Place root ball on unexcavated or tamped soil.

Gently tamp soil around root ball base firmly with foot pressure so that root ball does not shift.



American National Standards Institute (ANSI) A300 (Part 6) – 2012 Transplanting for Tree Care Operations – Tree, Shrub, and other Woody Plant Maintenance Standard Practices (Transplanting)